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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/678,595	10/03/2003	Brian W. Huber	DB000859-007	6161

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EXAMINER	
HUR, JUNG H	

ART UNIT	PAPER NUMBER
2824	

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/678,595	HUBER, BRIAN W.	
	Examiner	Art Unit	
	Jung (John) Hur	2824	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 October 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Amendment

1. Acknowledgment is made of applicant's Amendment, filed 28 October 2004. The changes and remarks disclosed therein were considered.

No claims have been cancelled or added. Therefore, claims 1-9 are pending in the application.

Claim Rejections - 35 USC § 102/103

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Thaik (U.S. Pat. No. 5,285,116).

Under 35 U.S.C. 102(b), Thaik in Figs. 4-7 discloses a pre-driver (24 and 26 in Fig. 4) providing an unbalanced output drive capability, comprising:

a first data path (24 in Fig. 4) having a plurality of transistor output stages (including columns of transistors in Fig. 5A); a second data path (26 in Fig. 4) having a plurality of output stages (including columns of transistors in Fig. 6B);

and a plurality of switches (where a "switch" is distinguished from a "transistor" and broadly interpreted as a unit that may include multiple transistors that are commonly controlled by a signal, such as N2 or N3 in Figs. 5A and 6B), each switch (for example, a switch comprising 51 and 102 commonly controlled by N2, similar to a double-pole, single- throw switch unit) for controlling (via, for example, N2) the conductivity of a pair (for example, the lower second columns of Figs. 5A and 6B) of the plurality of output stages in response to the level of conductivity of a subsequent driver output stage (or, to signals indicative of the strength of the output transistors in an output device) (for example, N2 is derived from an output buffer 20; see for example column 16, lines 4-6),

wherein one of said pair of output stages is connected to said first data path (for example, the lower second column of Fig. 5A within 24) and another of said pair of output stages is connected to said second data path (for example, the lower second column of Fig. 6B within 26).

In the alternative, under 35 U.S. C. 103(a), if the "switch" above is interpreted as a switching "transistor" (with reference to 114 or 116 in Fig. 7 of the instant application), Thaik fails to disclose the limitation "each switch" as recited in claims 1 and 6; however, the Thaik's combination of 51 in Fig. 5A and 102 in Fig. 6B, both controlled by N2, would be an obvious variant of "each switch" as recited in claims 1 and 6, since both variants control the conductivity of a pair of output stages in different data paths simultaneously via a common control signal.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 2-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Thaik (U.S. Pat. No. 5,285,116).

Thaik in Figs. 4-7 discloses a method of providing an unbalanced output drive capability to correct for output skews in subsequent amplification stages, comprising:

providing a plurality of output drive/pre-driver stages (for example, columns of transistors in Figs. 5A and 6B) on a first data path and on a second data path (24 and 26 in Fig. 4, respectively);

generating a two-bit code/signal (for example, N2 and N3) representative of the relative strength of an n-channel and a p-channel transistor in an output device (including 28, 30, 32, 34, and 36 in Fig. 4; see also, for example, column 16, lines 4-6 which discloses that the signals N2 and N3 are derived from an output buffer 20 in Fig. 4, which includes the output device);

controlling in pairs, or enabling, the number of output drive/pre-driver stages on said first and second data paths that are activated (for example, N2 and N3 activate in pairs the output stages in Figs. 5A and 6B) in response to the amount of skew represented by the two-bit code/signal (see, for example, column 5, lines 62-64), wherein at least a first pair (for example, the lower first columns of Figs. 5A and 6B) of said output stages is controlled by the first bit (for

example, N3) of said two-bit signal and at least a second pair (for example, the lower second columns of Figs. 5A and 6B) of said output stages is controlled by the second bit (for example, N2) of said two-bit signal, and wherein one output stage of each of said pairs is connected to said first data path (for example, the lower second column of Fig. 5A in 24) and another of each of said pairs of output stages is connected to said second data path (for example, the second column of Fig. 6B in 26), wherein said pre-driver produces an unbalanced output from the pre-driver (for example, the output DN1 in Fig. 5A; column 6, lines 36-38);

and inputting a data signal to the output device through the pre-driver (in Fig. 4, DATA SIGNAL is inputted to the output device through 24 and 26, which include Figs. 5A and 6B).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ong (U.S. Pat. No. 5,798,970) in view of Thaik (U.S. Pat. No. 5,285,116).

Regarding claims 7-9, Ong discloses a computer system (Fig. 3), comprising: a processor (108 in Fig. 3) having a processor bus (112, 110, and the bus from 108 to 102 and 104); an input device (102 in Fig. 3) coupled to the processor through the processor bus; an output device (104 in Fig. 3) coupled to the processor through the processor bus; a memory device (114 in Fig. 3)

coupled (via 116 in Fig. 3) to the processor bus, the memory device comprising (column 9, lines 50-65): a plurality of memory cells arranged in an array of rows and columns (column 9, lines 52-55); a plurality of devices for identifying cells within the array (column 9, lines 56-58); a plurality of pads (data terminals, column 9, lines 50-52); a data path connecting the plurality of pads and the array (column 9, lines 59-60), the data path comprising an output driver responsive to a data signal (column 9, lines 61-65).

Ong does not disclose a pre-driver providing an unbalanced output drive capability, comprising: a first pre-driver data path having a plurality of output transistors; a second pre-driver data path having a plurality of output transistors; and a plurality of switches, each switch for controlling the conductivity of a pair of said plurality of output transistors in response to signals indicative of the strength of output transistors in said output driver, wherein one of said pair of output transistors is connected to said first pre-driver data path and another of said pair of output transistors is connected to said second pre-driver data path, said pre-driver providing said data signal to said output driver.

Thaik discloses a pre-driver as in claims 1 and 6 above.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the computer system of Ong by incorporating the pre-driver of Thaik, for the purpose of controlling the switching speed with maximum efficiency across process, temperature and supply voltage variations (Thaik, column 1, lines 6-13).

Response to Arguments

8. Applicant's arguments filed 28 October 2004 have been fully considered but they are not persuasive.

Regarding claims 1 and 6, Applicant argues, starting at the bottom of page 7 through the middle of page 9, that Thaik "fails to teach or suggest that pull-up predriver 24 and pull-down predriver 26 are operated in such manner as to provide first and second data paths" (see top of page 9). Applicant presents similar arguments regarding claims 2-5 (starting at the bottom of page 9) and claims 7-9 (starting at the bottom of page 10).

In response, it is noted that the predriver units 24 and 26 in Fig. 4 of Thaik, per se, clearly represent two structurally distinct data paths within the buffer 20. The unit 26 provides a path for the DRV-HIGH signal, which is related to the DATA SIGNAL; the unit 24 provides a path for the DRV-LOW-B signal, which is also related to the DATA SIGNAL. See, for example, Thaik, column 5, lines 15-19. Therefore, Thaik anticipates the first and second data paths, as recited in claims 1 and 6. Similar response is presented for the Applicant's arguments regarding claims 2-5 and 7-9.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jung (John) Hur whose telephone number is (571) 272-1870. The examiner can normally be reached on M-F 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on (571) 272-1869. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jhh

VAN THU NGUYEN
PRIMARY EXAMINER